centrifuging the resulting suspension 2 at between 5200 to 5700 rpm to separate the suspension into supernatant 2 and pellet,

pooling supernatant 1 with supernatant 2, and

spray drying the pooled supernatants to obtain the shark cartilage extract.--

B1 cont

--20. The shark cartilage extract according to claim 19, further comprising cooling said suspension 1 and suspension 2 to between 40-60°C when said suspensions are at a temperature greater than 60°C.--

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IN THE ABSTRACT:

Please insert the attached abstract as a separate sheet at the end of the application.

REMARKS

In the Office Action dated April 15, 2002, claims 1, 2, 7, 8 and 15, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks.

The office action indicates that an abstract on a separate page is required. An abstract on a separate page is attached to this response.

Claim 2 was rejected under 35 USC § 112, second paragraph, as indefinite. Claim 2 has been canceled and new claims added to the application which clarify the language found indefinite. In view of the cancellation of claim 2, applicants request that this rejection be withdrawn.

Claims 1 and 7 were rejected under 35 USC §102(b) as anticipated by or alternatively under 35 USC §103 as obvious over Dupont. Applicants respectfully contend that the presently claimed shark cartilage extract is different from Dupont's extract. Dupont states in his abstract and in the specification that "Lyophilization substantially destroys the activity of these liquid fractions while no such abolition is observed in the solid extract". In contrast to Dupont, in the present invention, the liquid fraction is collected and lyophilized or spray dried to produce the anti-hypertensive shark cartilage extract. Therefore, the present shark cartilage extract is clearly different from Dupont's extract. In addition, under the heading "Statement of the Invention", Dupont indicates that his extract has anti-angiogenic properties which are defined as reduction of the area of blood vessels observed in vivo on experimentally induced tumors. He does not indicate that his extract has anti-parathyroid hypertensive factor (PHF) activity and there is no suggestion in Dupont that a substance which has anti-angiogenic properties will also have anti-parathyroid hypertensive factor activity. As discussed on page 1 of the present application, hypertension is generally defined as the elevation of the systolic and/or diastolic arterial blood pressure above a nominal value of 140/90 mm Hg. Diseases associated with hypertension include arteriosclerosis, hypertensive renal failure, stroke, congestive heart failure and myocardial infarction. Dupont lists diseases associated with angiogenesis as arthritis and atherosclerotic plaques (bone and ligaments), diabetic retinopathy, neovascular glaucoma, trachoma and corneal graft neovascularization (eye), psoriasis, scleroderma, hemangioma and hypertrophic scarring (skin), vascular

adhesions and angiofibroma (blood system). In view of the description in the present application and in Dupont, the present invention, a lyophilized or spray dried anti-hypertensive, is clearly a different component with a different function than the extract disclosed in Dupont and applicants request that this rejection be withdrawn.

Claims 2 and 15 were rejected under 35 USC §102(b) as anticipated by or under 35 USC §103 as obvious over Dupont. As discussed above, in the present invention the supernatant is lyophilized or spray dried (see original claim 2 and new claim 19). Dupont states that his supernatant loses activity when lyophilized. Therefore, the active components are different substances. In addition, they have different activities. Dupont's extract is an anti-angiogenesis agent while the extract in the present invention has anti-parathyroid hypertensive factor (PHF) activity. There is no suggestion in Dupont that his extract will lower blood pressure. In view of the fact that the presently claimed extract retains activity after spray drying or lyophilization and the fact that Dupont does not suggest that his extract would be useful as an anti-hypertensive, applicants request that this rejection be withdrawn.

Claim 8 was rejected under 35 USC §103(a) as obvious over Halperin and Dupont. Halperin discloses imidazoles which inhibit angiogenesis by inhibiting the Ca activated potassium channel. Halperin states in column 8, that the imidazoles can be administered in a cocktail with other supplementary potentiating agents including Ca antagonists such as verapamil, nifedipine,

nitrendipine and caroverine. Halperin does not disclose a shark extract which retains anti-hypertensive activity after lyophilization and thus does not cure the deficiencies in Dupont as discussed above. In view of the fact that the presently claimed extract is a different compound with a different activity (anti-hypertensive) than Dupont's extract, applicants contend that the presently claimed invention would not have been obvious over Halperin and Dupont and request that this rejection be withdrawn.

Applicants respectfully submit that all of claims 1, 2, 7, 8 and 15 are now in condition for allowance. If it is believed that the application is not in condition for allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fee for such an extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 01-2300.

Respectfully submitted,

for Monica Chin Kitts
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